Foreign language anxiety and achievement

Foreign Language Anxiety and Achievement: A Study of Primary School Students Learning English in China

Abstract

The present study sought to understand the nature and level of foreign language (FL) anxiety among primary school students and the relationship between FL anxiety and FL achievement. Changes in FL anxiety across groups of three primary school years were also examined. A total of 631 (324 male, 307 female) primary school students aged 9-11 completed the foreign language classroom anxiety scale (FLCAS, Horwitz, Horwitz, & Cope, 1986) that measured students' FL anxiety. Our participants' FL achievements as measured by regular assessments and formal examinations were also collected. On average, primary school students reported levels of FL anxiety comparable to those of adults observed in previous studies. Factor analysis on FLCAS generated four components of FL anxiety: communication apprehension, fear of negative evaluation, test anxiety and negative attitude towards classroom. Correlation analysis showed that students' FL anxiety was inversely correlated with their FL achievements. The correlation was stronger for formal examinations with higher stakes as compared to regular assessments with lower stakes. Finally, the correlation strengthened as a function of higher instructional level. Results are discussed in relation to previous research. Implications to FL education are also considered.

Keywords: foreign language anxiety, foreign language achievement, China, primary school, instructional level, FLCAS

I INTRODUCTION

Foreign language (FL) anxiety has been described as a situation specific form of anxiety (e.g., Horwitz, Horwitz, & Cope, 1986; Horwitz, 2001) and reflects feelings of anxiety arising from learning and demonstrating competence in a FL learning context. Horwitz et al's (1986) seminal research using the FLCAS suggests that FL anxiety consists of three distinct components: communication apprehension, test anxiety and fear of negative evaluation.

To date, the conceptual framework of FL anxiety proposed by Horwitz et al. (1986) and the accompanying Foreign Language Classroom Anxiety Scale (FLCAS) have been used widely, primarily in studies with adult populations (e.g., Cheng, Horwitz & Schallert, 1999; Liu & Jackson, 2008; Matsuda & Gobel, 2004) and/or in research carried out in Western contexts (e.g., Atef-Vahid & Kashani, 2011; Hewitt & Stephenson, 2012; Marcos-Llinás, & Garau, 2009; Sellers, 2000; Tallon, 2009; Tóth, 2008) to study FL anxiety experiences and the consequences of FL anxiety.

There is a growing interest in understanding and synthesizing research examining the relationship between FL anxiety and FL performance, evidenced by two recent meta-analyses (Teimouri, Goetze & Plonsky, 2019; Zhang, 2019). Both studies reported overall negative correlations between FL anxiety and FL performance ($r = -.36$ and $r = -.34$ respectively). They also suggested that educational level or age could have the potential to affect the correlation between FL anxiety and performance.

Yet FL anxiety is also experienced among young learners who are learning a FL for the first time (e.g., Chan & Wu, 2004). In China, the world's largest population of primary school aged students learn English as a foreign language each year, with approximately 65-70 million primary school students learning English (Ministry of Education, 2018). In 2001, China's Ministry of Education mandated English as one of the three core subjects for all students to learn from primary 3 (aged 8-9) onwards. Therefore, students engage in compulsory learning of English, taking at least four English lessons each week, each lasting approximately 40 minutes (English Curriculum Standard in MOE, 2011).

In addition, English is consistently taught and assessed throughout the education system in China (from primary school through to university). During this time, students participate in numerous exams, including mid-term exams, final exams, graduation exams, and enrolment exams. English education in primary school is thus considered a crucial period to establish a strong foundation for English learning (Qi, 2016). As a result, primary school students in China are likely to experience FL anxiety. Despite this, there are only a handful of studies focused on understanding FL anxiety in this population (Chan & Wu, 2004; Chen, 2007; Liu & Chen, 2014). Building upon this previous work, the current study extended the age range of students to examine the effect of instructional level and the types of FL assessments (low and high stakes) on FL anxiety.

The present study therefore aimed to develop our understanding of Chinese primary school students' FL anxiety. More specifically, this study aimed to examine

the nature of FL anxiety in this population (using analysis of the FLCAS), to explore instructional level changes in FL anxiety as children progress through primary school and also the first to examine whether the strength of the relationship between FL anxiety and FL achievement changes depending on the nature of students' assessment (low or high stakes).

II LITERATURE REVIEW

Early studies in the 70s that investigated the relationship between FL anxiety and achievement reported conflicting results (Scovel, 1978). For example, the seminal study of Swain and Burnaby (1976) found that anxiety was negatively correlated with one French proficiency measure but not with other French proficiency measures. Chastain (1975) found a negative correlation between test anxiety and French test scores while a positive correlation was found between anxiety and scores of German and Spanish. Scovel (1978) commented that the mixed results could be due to different types of anxiety being used in these studies. To address this issue, Horwitz et al. (1986) proposed the classical FLCAS to conceptualize and measure FL anxiety. Horwitz et al. suggested that the FLCAS contains three main components: communication apprehension (CA), test anxiety (TA), and fear of negative evaluation (FNE).

CA refers to anxiety to communicate with others. FL learners with a high degree of CA seldom initiate conversations and tend to contribute less in classroom interactions (Gregersen & Horwitz, 2002). These learners are also less likely to attend class or participate/engage in classroom activities or discussions (Šafranj & Zivlak, 2019). Causes of CA varied, ranging from external factors (e.g., culture differences) (Andrade & William, 2009; Rimkeeratikul, 2016) to internal factors (e.g., competitiveness) (Masuoka, 2008; Hsu, 2004). TA, on the other hand, is defined as a type of performance anxiety driven by fear of failure (Horwitz et al., 1986), with worry and emotionality as two core components (Zeidner &Matthews, 2005). Causes of TA may vary. Some typical causes are poor skill (Gursoy & Arman, 2016) and previous experiences of failure (In'nami, 2006; Lowe, Grumbein, Raad, 2011). The third component, FNE, refers to one's apprehension about, avoidance of, and the assumption of others' negative evaluations (Horwitz et al., 1986). Learners with a high degree of FNE would worry about leaving a negative impression on others and avoid any risk-taking occasion associated with negative evaluations (Šafranj & Zivlak, 2019). In the FL learning context, students' FNE can be caused by the nature of the language classroom, particularly where students' performances are constantly evaluated by both teachers and peers (Kitano, 2001; Shabani, 2012). The three constructs of the FLCAS have been confirmed by researchers (e.g., Liu & Jackson, 2008). However, it should be noted that a number of studies using the very same questionnaire have generated different numbers of subcomponents (e.g. , Aida, 1994; He, 2018; Park, 2014). These differences could be due to the differences associated with learner proficiency, cultural background, learning context, and so on (Horwitz, 2016).

Since the seminal study of Horwitz et al (1986), FL anxiety has attracted

considerable research attention (e.g., Liu & Jackson, 2008; Hewitt & Stephenson, 2012; Tuncer & Doğan, 2015). Researchers have consistently found an inverse relationship between FL achievement and the general FL anxiety measured by the FLCAS (e.g., Teimouri, Goetze, Plonsky, 2019; Botes, Dewaele, Greiff, 2020; Zhang, 2019). The inverse relationship, however, does not imply causality. In fact, researchers in the field have long been debating the direction of causality. For example, Sparks and Ganschow (1991) proposed the Linguistic Coding Differences Hypotheses (LCDH), which conceptualized FL anxiety as a result of poor language learning ability rather than a cause of poor performance. Others argued that FL anxiety is based on negative expectations that result in worry and emotionality that may lead to performance deficits (Horwitz, 2000), which is supported by empirical studies (e.g., Yan & Horwitz, 2008).

While the causal relationship between FL anxiety and FL achievement is debatable, scholars in the field are also interested in evaluating the relationship between FL achievement and the subcomponents of the FLCAS. For example, research with adults suggests an inverse relationship between CA and language proficiency (e.g., Liu & Jackson, 2008). Research exploring the relationship between FL test anxiety and attainment suggests an inverse relationship between TA and language performance among adults in different countries including China (Liu, 2007), New Zealand (Oya, Manalo, & Greenwood, 2004), India (Joy, 2013) and Iran (Salehia & Marefat, 2014). However, other studies did not find a clear relationship between TA and performance (Cakici, 2016; In'nami, 2006). The recent meta-analyses also showed that TA only had a weak correlation close to zero with FL achievement (Teimouri et al, 2019; Zhang, 2019). One possible explanation is that TA may not be interpreted as unique to FL tests. Compared with CA and TA , FNE has received less attention. Researchers (e.g.,Gregersen & Horwitz, 2002; Pishghadam & Akhondpoor, 2011) posited that students who have excessively high demand of themselves are more likely to fear failure and that performance deficits would reinforce their FNE.

Summing up these findings, it is quite clear that there is a negative relationship between FL anxiety and FL achievement. However, evidence supporting this relationship mainly came from adults. For many, FL learning is a long process and research has examined changes in FL anxiety levels as learning progresses (e.g., from beginner to intermediate learner; referred to here as instructional level differences). Across different cultural contexts, FL anxiety has generally been reported to increase with higher levels of instruction (e.g., Kitano, 2001; Gürsoy & Akin, 2013) or proficiency level (Marcos-Llinas & Garau, 2009). However, other studies have reported decreases in FL anxiety with year of school (Elkhafaifi, 2005) or no differences across instructional year groups (MacIntyre, Baker, Clement & Donovan, 2002; Al-Khasawneh, 2016).

In the context of China, most of the research examining FL anxiety has been carried out among adults (Guo, Xu & Liu, 2018; He, 2018; Jiang, Y. & Dewaele, J, 2020; Liu & Jackson, 2008). For example, He (2018) reported a moderate degree of FL anxiety measured by FLCAS and a higher degree of FL speaking anxiety as measured an FL speaking anxiety scale. FL anxiety was reported to debilitate FL learning while

FL speaking anxiety was negatively correlated only to their self-evaluated oral test, but not to the actual oral proficiency. Jiang and Dewaele (2020) reported FL anxiety was negatively associated with self-perceived oral competence (r = -.420). Liu and Jackson (2008) revealed that non-English majors' FL anxiety correlated with self-rated English proficiency in reading (r = -.249), listening(r = -.287), writing (r = -.263), and speaking (r = -.362).

By contrast, research with young learners in the primary school context is very limited with a few exceptions that used the FLCAS to examine primary school students' levels of FL anxiety (Liu & Chen, 2014) and the relationship between their FL anxiety and FL achievement (Chan & Wu, 2004; Chen, 2007). Chan and Wu (2004) carried out a study with 5th graders and reported that FL anxiety (measured using FLCAS) was negatively related to their language performance (r = -.279). Chen (2007) also reported an inversed correlation between FL anxiety and FL achievement among 5th graders (r = -.392) and 6th graders (r = -.294) in two private bilingual elementary schools. Liu and Chen (2014) examined FL anxiety using FLCAS among 5th and 6th graders but did not explore its correlation with FL achievement. While the above studies examined either a single age group (Chan & Wu, 2004) or a narrower age range (Chen, 2007; Liu & Chen, 2014), the effect of instructional level on FL anxiety has not been closely studied (i.e., comparison across different age groups).

Another unexplored but important factor is associated with the nature of students' FL assessment (regular classroom assessment vs formal examination). FL tests with high stakes may create anxiety specific to the FL tests and thus impair FL test performance. In particular, in the Chinese context, test scores and rankings of high stake assessments are recorded in student file that are associated with significant consequence (e.g. later education qualification). Therefore, it is reasonable to hypothesize that FL anxiety may be closely associated with high-stake exam as compared to low-stake exam, which may shift the strength of the relationship between students' FL anxiety and their FL achievement. For these reasons, it is necessary to study the situations under which FL anxiety may have a stronger impact on FL achievement so as to offer a better understanding of FL anxiety and achievement.

III PURPOSE

Given the considerable number of Chinese primary school students learning English as a FL each year, this study sought to make a significant contribution to the field and provide research for teachers working in this context to draw upon. Understanding how FL anxiety changes as students become more proficient in the language is important, as is situating this knowledge in an understanding of the students' curriculum and learning context. Moreover, no previous study to date has examined whether the relationship between FL anxiety and FL achievement would change as a function of test stakes (e.g., high stakes vs. low stakes). To address the existing gaps in the field, four research questions have been raised:

1. What is the nature and level of Chinese primary school students' FL anxiety and are there instructional level differences in the nature or level of their FL anxiety?
2. What is the strength of the relationship between students' FL anxiety and their FL achievement?
3. Does the anxiety-performance correlation vary depending on the type/stake of FL assessment?
4. To what extent does FL anxiety predict FL achievement and does this vary by instructional level?

IV METHOD

1 Participants

A total of 631 primary school students took part in this study (324 boys, 307 girls). These participants , who had diverse social economic backgrounds, came from the same primary school located at the border of a suburban and urban area in a city in Guangdong Province. The school could represent the typical English learning context in the primary schools of China because it followed the National Curriculum guidelines (Ministry of Education, 2011) to teach English. With the consent from the head teachers and other teachers, all the students from 12 classes across 3 school years in this school (4 classes at each school year) participated, including 215 Year 4 students (110 boys, 105 girls, mean age = 9.61, *SD* = .67), 209 Year 5 students (107 boys and 102 girls, mean age = 10.62, *SD* = .71), and 207 Year 6 students (107 boys, 100 girls, mean age = 11.56, *SD* = .71). No exclusion criteria were applied and our participants accounted for over 90% student population of each year group. All children had Mandarin as their first language and had been learning English as a FL language for one (Year 4), two (Year 5), or three (Year 6) years. No incentives were provided for participation and only students with full data sets (97%) were included in the analysis.

In terms of the FL level of these students, Year 4 students are expected to reach Level 1 and Year 5 and 6 students Level 2, based on the English Curriculum Standard (MOE, 2011) language objectives. Both Level 1 and Level 2 have goals for listening, speaking, reading, writing, play & acting and audio & visual. For example, at Level 1, among other things, students are expected to be able to recognize or point to pictures or objects according to what they hear (listening), be able to express simple emotions and feelings (speaking), be able to recognize illustrated words (reading), be able to correctly write alphabet letters and words (writing), be able to perform English songs and children's plays (play and acting) and be able to understand simple English cartoon films (audio and visual). At Level 2, among other things, students are expected to be able to understand and react appropriately to commonly used instructions (listening), be able to have a short dialogue about familiar persons and family topics (speaking), be able to understand short instructions in textbooks (reading), be able to compose simple

greeting messages (writing), be able to perform 30-40 English songs and 30-40 rhymes (including Level 1 songs; play and acting) and be able to understand simple educational TV programs (audio and visual).

2 Instruments

Foreign Language Classroom Anxiety Scale (Adapted Measure of the FLCAS, Horwitz et al., 1986). This was a modified instrument, adapted from Horwitz, Horwitz, and Cope's (1986) widely used *Foreign Language Classroom Anxiety Scale* (FLCAS). The FLCAS is a 33-item, self-report 5-point Likert scale to assess the degree of FL anxiety. The instrument was modified minimally to measure anxiety specific to English language learning among primary school students in China. For example, as English is a FL for all participants, the words *foreign language* and *language* were consistently replaced with the word *English* to specify that FL referred to English and ensure children reported their feelings towards English. The scale was also translated into a Chinese version (back translation), reviewed by teachers to ensure the content was appropriate and piloted with a sample of children (n = 105) to ensure it was developmentally appropriate (Cronbach's coefficient alpha = .85).

The FLCAS was selected for this study because it has been showed to demonstrate high reliably (e.g., Cheng, Howritz, & Schallert, 1999; Elkhafaifi, 2005**;** Sellers**,** 2000) and that it is suitable to be used to measure general FL anxiety for examining the relation between anxiety and achievement (Zhang, 2019). Furthermore, the FLCAS and other revised versions have been previously used among primary school students (Chan & Wu, 2004; Liu and Chen, 2014) and high school students (Cui, 2011) learning English in China. Therefore, the FLCAS was chosen and piloted in the current context.

Foreign Language Achievement. FL achievement scores were obtained from school administered assessments that examined students' knowledge, understanding and use of English in reading, writing, speaking and listening. For this study, scores of all four skill assessments throughout a semester were obtained. These included two-unit tests, a mid-term exam, and a final exam. Using these tests, composite scores were created.

The 'regular assessment' scores reflected the means of two low-stakes unit tests, designed by the class teachers to assess students' learning of prior curriculum content. The unit tests were administered at the school levels, to assess students' learning, the scores of which can be compared between classes. On the other hand, the more 'formal examination' scores reflected the means of the higher-stakes mid-term and final examinations. The results of both tests go on students' record and have consequences for later education opportunities. Students took mid-term exams at the municipal level and final exams at the provincial level, the scores of which would be used to compare FL performance across schools and cities. To be more specific, the mid-term and final exams are criteria that the public uses to evaluate effectiveness of a school.

Assessments (both high-stake tests and low-stake tests) at all instructional levels included measures of listening (e.g., distinguish between words with similar pronunciations, understand main ideas from an oral passage), reading (e.g. understand word meanings, comprehend detail within a text and draw inferences), writing (e.g., use words, punctuation, spelling, and grammar appropriately) and speaking (e.g., hold a conversation, use stress and intonation appropriately). Further information about these assessments can be found in the National Curriculum Standard (Ministry of Education, 2011). All assessments were marked by teachers on a scale of 0-100. We used the construct 'FL achievement' in the current study to reflect the students' average achievement across all four assessments.

3 Procedure

Ethical approval was granted from the University of X and since the study was conducted with primary school students, their rights were prioritized during all stages of this research. To protect the students and to ensure authenticity, ethical issues such as confidentiality, informed consent, and privacy had been considered. All students completed the questionnaire in their classroom at the end of a semester (there were two semesters in each school year). The questionnaire prompted students to provide basic demographic information, including student number, age, gender, and school year. Instructions for completion of the questionnaire were explained by the author and each questionnaire item was read aloud to ensure reading skill did not affect completion. Students were encouraged to answer all the questions and use the full range of the Likert scale from strongly disagree to strongly agree, as appropriate. Students were also invited to ask questions if anything was unclear to them. The questionnaire took approximately fifteen minutes to complete. School awarded assessment results for each student were provided, reflecting students' performance over the semester.

4. Data Analysis

An explanatory factor analysis with varimax rotation was performed to reveal the underlying components of the modified FLCAS. Multivariate analysis of variance was then carried out to examine instructional level differences in students' FL anxiety. In addition, correlations were carried out to examine the strength of association between FL anxiety and FL achievement. Finally, a series of linear regression analyses were carried out to examine the amount of variance explained in FL achievement by FL anxiety. Separate multiple regressions were also conducted at different instructional levels to investigate the effect of instruction levels. For significance testing, the commonly used p-value threshold level of .05 was adopted. All data were analyzed in SPSS.

V RESULTS

With regards the nature of FL anxiety, an explanatory factor analysis using the principal axis method was conducted to understand the underlying components of the FLCAS among this population. Factor analysis revealed a four-factor solution, with communication apprehension (11 items), fear of negative evaluation (9 items), test anxiety (3 items) and negative attitudes to classroom (10 items) emerging as four distinct factors. This method minimizes the number of variables that have high loadings on each factor. A four-factor solution emerged, see Table 1.

---Insert Table 1 here---

Based on the principles of explaining as much variance as possible and retaining a conceptually interpretable factor structure, a four-factor solution emerged (KMO =. 89), accounting for 42.3% of the total variance. Table 1 displays the rotated component matrix, sorted by factor. To sharpen focus on the salient loadings, loadings less than .30 were excluded.

In this study, 23 items out of 33 loaded identically on three factors, aligning with the three factor model of FL anxiety initially suggested by Horwitz et al's (1986) and supported by other researchers (e.g, Lee, 2011; Zulkifli, 2007), However, other researchers using this scale have identified 4 or even 5 factors within the FLCAS, depending on use in different contexts and with different age group (e.g., Aida, 1994; Cao, 2011; Park, 2014). In the present study, a fourth factor: 'attitudes towards language classroom' (ATC) was identified, which aligns with Aida's (1994) research, who similarly suggested 'attitude towards classroom' could be the fourth factor.

Factor 1, which accounted for 21.78% of the total variance, reflected learners' fear of speaking in English and was labeled 'communication apprehension' (CA). Factor 2, explaining a further 8.81% of the total variance, was characterized by learners' apprehension of being negatively evaluated by their teachers and negatively compared with peers and was named 'fear of negative evaluation' (FNE). Factor 3, accounting for 4.29 of the variance, involved students' feelings about examinations and was labeled 'test anxiety'(TA). Finally, factor 4, which accounted for 7.48% of the variance reflected learners' feelings and perceptions of their English class and was named 'negative attitudes toward English classroom'(ATC).

The internal consistency of the 33-item FLCAS as determined by Cronbach's alpha yielded a reliability estimate of .88, which was consistent with previous studies (e.g., Horwitz, 1986; Hewitt & Stephenson, 2012; Liu & Jackson, 2008). In addition, the Cronbach's coefficient alpha was .83 for CA, .86 for FNE, .75 for ATC, and .76 for TA.

Descriptive statistics for FL anxiety, its components and FL achievement are presented in Table 2. All scores were normally distributed. There was a trend towards students achieving higher FL achievement on the formal examination with higher stakes than regular assessment with lower stakes. On average, students reported experiencing a moderate level of FL anxiety: Mean = 88.03, SD = 17.91.

---Insert Table 2 here ---

Multivariate analysis of variance (MANOVA) was then carried out to examine instructional level (i.e., year) differences in students' FL anxiety, see Table 3 for the descriptive statistics of the results.

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A significant instructional level effect was found on FL anxiety, $F(2, 628) = 26.64$, $p < 0.001$, $\eta_p^2 = .08$, with FL anxiety increasing with higher instructional level. Furthermore, a MANOVA (with Bonferroni correction) that evaluated the effect of instructional level on the subcomponents of FL anxiety found a significant effect of instructional level for CA [$F(2, 628) = 34.85$, $p < .0025$, $\eta_p^2 = .10$], TA [$F(2, 628) = 52.10$, $p < .0025$, $\eta_p^2 = .14$], and FNE [$F(2, 628) = 19.92$, $p < .0025$, $\eta_p^2 = .06$]. The analysis did not find a significant effect of instructional level for ATC [$F(2, 628) = 2.29$, $p = .10$, $\eta_p^2 = .004$]. Interestingly, a large effect size was found for TA, a large to medium effect size for CA and medium effect size for FNE (where .01 = small, .06 = medium and .14 – large; Cohen, 1988). For these subscales with a significant instructional level effect, younger students experienced lower levels than older students and the post hoc comparison using Tamhane's T2 test indicated that all three groups were significantly different from one another ($p < .001$) on FL anxiety as well as its three subscales (CA, TA and FNE). The results, however, showed no significant differences among learners of different ages for ATC.

Correlations were then carried out to examine the strength of association between FL anxiety and FL achievement. See Table 4.

--- Insert Table 4 here ---

FL anxiety was inversely associated with all FL achievement measures. However, there was a trend towards this relationship being stronger for the high stakes examinations than low stakes assessments. Compared with these two assessments, high stakes assessment showed a stronger correlation with the subscales of FL anxiety, with a closest relation found between higher stakes assessment and FNE.

Correlations were also carried out to examine instructional level differences in the strength of the relationship between FL anxiety and FL achievement. See Table 5.

---Insert Table 5 here---

There was a trend towards an increasingly stronger relationship between FL anxiety

and FL achievement with higher instructional level, with FL anxiety consistently being inversely related with all FL achievement measures. In particular, the strength of relationship between FL achievement and the three components of FL anxiety (CA, TA, and FNE) increased with the higher instructional level while no significant differences were found in the strength of relationship between FL achievement and the fourth component (ATC) across instructional levels.

FL anxiety was entered into a series of linear regression analyses to examine the amount of variance explained in FL achievement by FL anxiety. Separate regressions were conducted at different instructional levels. See Table 6.

---Insert Table 6 here---

Learners' FL anxiety explained significant independent variance in their FL achievement at all levels. However, the amount of variance explained by FL anxiety increased with instructional level, accounting for 27.8%, 39.1% and 48.4% of the variance at Year 4, 5 and 6 respectively.

To understand whether the nature of FL anxiety on achievement changed across years, the four sub-scales were entered simultaneously in a series of regression analyses, to explore which components were the best predictors of FL achievement. Forward regression method was adopted so that the components explaining greater variance occurred first. See Table 7.

---Insert Table 7 here ---

While all of the FLCAS sub-components explained significant variance in FL achievement, CA emerged as the strongest predictor, explaining 27% of the variance, the largest among the four predictors. FNE added an extra 10% of the variance, and ATC explained an additional 4%, and TA an additional 3% of the variance.

Analysis split by instructional level was also conducted, with the final models including all significant predictors. The result is given in Table 8.

---Insert Table 8 here ---

Most of the sub-components of FLCAS explained a significant proportion of variance in FL achievement across years. In addition, different aspects of anxiety emerged as the strongest predictor at each instructional level, with ATC (year 4), CA (year 5), and FNE (year 6) being the strongest predictors.

VI DISCUSSION

This study makes a substantial contribution to our understanding of FL anxiety among primary school students learning English in China. Firstly, with regards to the first research question concerning the level of FL anxiety, students in our study reported levels of FL anxiety comparable to, and in some cases higher than those found among adults learning a FL, for example, Iranian high school EFL students in the study of Atef-Vahid and Kashani (2011) (M = 87.8, SD = 24.70), Hungarian university EFL students in the study of Tóth (2008) (M = 84.36, SD = 19.26), university language learners of Spanish in the study of Sellers (2000) (M = 85.69, SD = 28.13), and university learners of Spanish in Tallon's (2009) study (M = 86.76, SD = 25.86). Therefore, FL anxiety is indeed experienced by young learners in China and is therefore important for primary school teachers to consider.

However, the nature of FL anxiety (in answering the first research question) differed from studies with adults, as four components were identified: negative attitude towards classroom(ATC), communication apprehension(CA), test anxiety(TA) and fear of negative evaluation(FNE). The result aligns with previous studies (e.g., Aida, 1994; Cheng, et al., 1999 ; Matsuda & Gobel, 2004 ; Tóth, 2008; Park, 2014) with different components occurred for the widely accepted reasons commented by Horwitz (2016) that the components of FL anxiety (measured using the FLCAS) will vary across different learner populations and learning contexts.

Furthermore, with regard to the first research question concerning the impact of instructional level on FL anxiety, this study did found instructional level differences in FL anxiety which aligned with previous research (Gürsoy & Akin, 2013; Kitano, 2001; Marcos-Llinas & Garau, 2009) suggesting as students' progress to higher instructional levels or more advanced classes, they exhibit higher levels of FL anxiety. Our participants' learning context may offer a number of explanations for this finding. Firstly, within the English Curriculum Standard (MOE, 2011), FL learning becomes increasingly challenging during the first few years. It starts with basic vocabulary and learning English through games and songs before progressing to reading and writing activities and learning more complex vocabulary and grammatical rules. This shift in teaching may, in some way, explain the instructional level differences in FL anxiety. Furthermore, with higher instructional level, students are accumulating greater awareness of the importance of FL achievement for their educational success, which may lead to heightened levels of FL anxiety with age, as they understand the importance of their FL examinations and are under increasing pressure to enter a good ranking middle school. Finally, in our study, students were actually experiencing a decline in their FL achievement as a result of lower marks awarded for their FL assessments, which may also have affected their FL anxiety.

Regarding the second research question concerning the strength of the relationship between FL anxiety and FL achievement, this study also found a statistically significant inverse relationship between FL anxiety and FL achievement. While FL anxiety predicted 43% of the variance in students' FL achievement, this figure increased considerably from Year 4 (27.8%) to Year 6 (48.4%). This finding of a significant inverse relationship between FL anxiety and FL achievement echoes those of previous

studies carried out in different contexts (e.g., Aida, 1994; Chen, 2007; Cheng, Horwitz, & Schallert, 1999; Hewitt & Stephenson, 2012; Horwitz, 2001). However, it also extends this research in a number of important ways. Firstly, it makes a considerable contribution to our understanding of the strength of the relationship between FL anxiety and FL achievement among primary school aged students learning English in China. It also highlights that over a developmental period of three years, the relationship between FL anxiety and FL achievement strengthens considerably, and this needs to be considered by teachers teaching in this context.

The third research question investigated the impact of test stake (low or high) on the anxiety-performance correlation. This correlation was found to be stronger in higher-stakes examinations compared to lower-stakes classroom assessments. To the best of our knowledge, this is the first study to observe the effect. In higher stakes examinations, students are under greater pressure from parents and teachers to perform well and marks received in these examinations go on their student record, which have consequences for later education opportunities (e.g., progression to next grade level, middle school enrollment). In addition, these examinations were completed within a more test-like atmosphere (yet still in their classroom), which may strengthen the relationship between FL anxiety and FL performance. On the other hand, the regular classroom assessments, designed by teachers to assess students' progress, were lower stakes tests. This result highlights the influence of students' perceived importance of assessments and how test stakes can shift the relationship between FL anxiety and FL achievement. This result also unveils the potential negative impact of formal examinations in the primary school years and suggests that efforts should be made within the Chinese education system to remove students' perceptions of these high-stake examinations, to reduce the impact of their FL anxiety on achievement.

With regard to the fourth research question concerning the amount of variance in FL achievement predicted by FL anxiety, considering each of the four components identified in this study, all components explained independent variance in FL achievement, with CA being the strongest predictor. Indeed, consistent with previous studies (Gregersen & Horwitz, 2002; Liu & Jackson, 2008), CA has been found to be negatively related to educational outcomes as students who report high CA present several characteristics which impede the progression of learning in the classroom, and ultimately achievement (e.g., lower self-confidence or an over concern about their ability). The finding of an inverse relationship between TA and FL achievement also aligns with previous research (Joy, 2013; Liu, 2007; Oya, Manalo, & Greenwood, 2004; Salehi & Marefat, 2014). TA has been argued to consume cognitive resources, such as attention and working memory, interfering with students' exam preparation and concentration during the exam (Eysenk & Calvo, 1992). Furthermore, test-anxious students often hold pessimistic attitudes about their ability to perform in assessments and overestimate the effort they need to succeed. It has been suggested that this may lead to students giving up after experiencing failure and consequently perform poorly (Lang & Lang, 2010). In addition, FNE also inversely predicted FL achievement. Students with a high degree of FNE are often overly concerned with leaving a good

impression on others and this exaggerated self-awareness may occupy the attention on the task and restrict learners' capacity to be achieved (Brook & Willoughby, 2015). In the context of China specifically, the fear of being negatively evaluated is often high and associated with potential shame and a sense of inferiority that results from failing to live up to one's standards. Finally, ATC also inversely predicted FL achievement; while there is no research which has examined students' negative attitudes towards their FL classroom and its relationship with their FL achievement, it is possible that students with a negative attitude towards class may be less motivated to learn FL, which may lead to a poorer performance.

Finally, with regard to the impact of instructional level on the predictive power of performance, the four components underlying FLCAS were found to have different predictive powers over FL achievement as a function of instructional level. In other words, the predictors of FL achievement changed as the instructional level increased. For example, TA only emerged as a significant predictor in Year 5 and 6. The fact that it predicted FL achievement in the later years of instruction may reflect the growing pressure on students to achieve high marks in their examinations in primary school, as students are placed in different middle schools according to their scores on these exams. Future research aimed at fully understanding students' experiences of FL learning and assessment in the classroom will shed light on FL instruction related changes found in the present study.

VII IMPLICATIONS

The present study highlights a number of important educational implications. Firstly, primary school aged children in China clearly experience levels of FL anxiety which are comparable to those found among adults. At present, teachers in China use the Ministry of Education's English Curriculum Standard (MOE, 2011) for English teaching guidance. While this document discusses the importance of promoting positive FL attitudes and interest to learn the FL, there is no reference to FL anxiety within it, which is important to raise teachers' awareness of the presence of FL anxiety among primary school aged children in the early years of schooling. In addition, the current study showed a tendency towards a strengthened negative relationship between FL anxiety and FL achievement with higher instructional levels. It is crucial that teachers can recognize the presence of FL anxiety and understand how classroom practices and assessment conditions influence FL anxiety.

To date, there is very little research to explore evidence-based approaches to reduce FL anxiety in the primary school classroom, and this represents an important area to direct future research. Supporting and encouraging a genuine interest in FL learning and using classroom activities less likely to provoke anxiety (e.g., replacing spelling drills with crossword puzzles) may be beneficial. In addition, shifting the emphasis from competitive individual activities (e.g., individual reading task) to collaborative group activities (e.g., co-operative reading) may also lead to increased encouragement, support and motivation among students. Finally, it is also suggested to arrange

classroom activities tailored to students aligning with preference based on their proficiency level. For example, with regard to relatively easy tasks, activities like chanting activities including vocabulary reviews or spelling chain games could replace a mechanical spelling drill.

To reduce specific aspects of FL anxiety, a number of approaches could be adopted. For example, to reduce CA, students could be provided with sufficient preparation time and untimed performances. To reduce FNE, supporting students to understand that FL learning is a lengthy process and that making mistakes is evidence of learning and allows opportunities for improvement is important. Ensuring a non-threatening and supportive classroom atmosphere would also help; this atmosphere do not always exist in primary schools in China. With regard to TA, careful consideration should also be made to the nature of assessments. At present, students' FL achievement is measured through individual performance on paper-based classroom assessments and examinations taken each year. However, including a broader range of assessments (pair/group work, problem solving exercises, role-play, etc., Young, 1991), and emphasizing students' progress rather than solely their achievement, may help to lessen FL test anxiety. There is also a culture in China of announcing children's individual exam results to the whole class or openly ranking students according to the FL achievement. These practices are likely to lead to heightened levels of FL anxiety, specifically test anxiety and fear of negative evaluation.

Finally, it is crucial that teachers identify and openly recognize students' strengths and areas of progress and encourage them accordingly. For example, while a student may suffer from poor pronunciation, but has good grammar, attention needs to be given to those areas of strength, in addition to areas in need of development.

VIII LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Firstly, this study was conducted in a single school, which limits the generalizability of the findings. The school participating in this study was selected to ensure it served a wide demographic and included students from diverse social backgrounds and living in suburban and urban areas. Furthermore, this study is the largest of its kind when compared to other studies of FL anxiety among primary school students in China. Since this school followed the National Curriculum for English, we believe that the students' experiences of the curriculum would align closely with students in other primary schools across China. For this reason, we suspect that the anxiety performance relationship found in our study may likely exist in other schools as well. Future studies in other school districts are needed to test this.

A second limitation concerns the FLCAS. The FLCAS is one of the most widely used surveys to study FL anxiety. A recent meta-analysis showed that the FLCAS can be used to measure general FL anxiety for study anxiety-performance relationship (Zhang, 2019). However, it should be pointed out that FLCAS has a heavy focus on speaking (Cheng, Horwitz & Schallert, 1999; Gregersen & Horwitz, 2002; Hewitt & Stephenson, 2012). In addition, this study would have benefitted from a qualitative

method of data collection (e.g., student interviews), to understand, for example, students' perceptions of the differences between low stakes and high stakes assessments, and how they feel this is related to their anxiety. Therefore, we call for future research to use different FL anxiety measures reflecting more specific FL anxiety (e.g., skilled based anxiety in Cheng et al, 1999 and Saito et al., 1999) and qualitative method (e.g., Yan & Horwitz, 2008) to examine the relation between anxiety and performance among young students.

A final limitation is that FL achievements were measured by FL tests from the school, rather than standardized FL achievement measures. As a result, our students in different instructional levels were given different FL assessments. Nevertheless, we argue that it is more important to understand the strength of relationship between FL anxiety and FL achievement that is measured by school tests because these are more meaningful to students. Furthermore, these tests were the assessments the teachers used annually to evaluate their students' proficiency and learning progress and thus were arguably very suitable for the current study.

IX CONCLUSION

Among a large sample of primary school students (aged 9-11) learning English as a foreign language in China, four components of FL anxiety were identified using the FLCAS: communication apprehension, fear of negative evaluation, test anxiety and negative attitude towards classroom. In general, our students reported levels of FL anxiety similar to those reported in previous studies with adults. An inverse relationship between FL anxiety and FL achievement was also found, and was stronger when FL achievement was measured using high stakes assessments compared to lower stakes assessments. Moreover, FL anxiety increased with higher instructional levels. Given the enormous number of primary school students learning English in China, more research is needed to understand the classroom practices in primary schools that are closely related to FL anxiety in this foreign language learning context, to optimize the teaching and learning process for all students.

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Table 1. Varimax Rotated Loadings for Four-Factor Solution for FLCAS

Items	Factors			
	I	II	III	IV
32. I feel easy when native English speakers are with me.	.663			
3. I tremble when I know that I'm going to be asked to speak in English class.	.643			
4.I am afraid when I don't understand what the teacher is saying in the English class.	.631			
14. I will not be nervous when speaking with native English speakers.	.631			
18. I feel confident when I speak in English class.	.619			
27. I get nervous when I speak in my English class.	.617			
20. I feel my heart pounding when I am going to be asked to speak in English class.	.592			
9. I start to panic when I have to speak without preparation in English class.	.573			
1. I never feel quite sure of myself when I am speaking in my English class.	.535			
13. It embarrasses me to volunteer answers in my English class.	.519			
29. I get nervous when I don't understand every word the English teacher says.	.500			
7. I think that my classmates' English is better than mine.		.723		
23. I always feel that my classmates speak better English than I.		.711		
12. In English class, I am so nervous that I forget what I know.		.698		
2. I don't worry about making mistakes in English class.		.656		
19. I am afraid that my English teacher will correct every mistake I make.		.639		
15. I get depressed when I don't understand what the teacher is correcting.		.633		
24. I feel shy when speaking English in front of other students.		.615		
31. I am afraid that my classmates will laugh at me when I speak English.		.606		
33. I get nervous when the English teacher asks questions which I haven't prepared in advance.		.591		

22. I don’t feel pressure to prepare very well for English class.	.660	
16. Even if I am well prepared for English class, I feel anxious about it.	.615	
6. In English classes, I think of things that are unrelated to the lesson.	.605	
26. I feel tenser and have more pressure in English class than in other classes.	.600	
17. I often feel like not going to my English class.	.587	
30. I feel overwhelmed by the number of rules I have to learn to speak English.	.548	
28. Before English class, I feel confident and relaxed.	.528	
11. I don’t understand why some people get so upset over English class.	.511	
5. It wouldn’t bother me at all to take more English classes.	.496	
25. English class moves so quickly that I worry about getting left behind.	.367	
21. The more I prepare for an English test, the more confused I get.		.770
10. I worry about the consequences of failing my English class.		.762
8. I am usually at ease during tests in my class.		.702

Note: To sharpen our focus on the salient loadings, loadings less than .30 in absolute value are blanked out.

Table 2. Descriptive Statistics for all Variables

Assessment	Full range	Range	Mean	*SD*	Skewness	Kurtosis
FL anxiety	33-165	47-139	88.03	17.91	0.32	-0.46
ATC	10-50	11-49	24.09	6.49	0.79	0.47
CA	11-55	13-49	30.56	7.93	0.35	-0.65
FNE	7-35	9-45	25.06	7.85	0.50	-0.67
TA	3-15	3-15	8.32	2.91	0.29	-0.69
Regular assess	0-100	47-100	81.15	10.36	-0.54	-0.25
Formal exam	0-100	48-100	84.32	10.87	-0.85	-0.07
FL achieve	0-100	51-100	82.73	10.04	-0.71	-0.22

Note: FL anxiety = FLCAS score, ATC = Attitude towards classroom, CA = communication apprehension, TA = test anxiety, FNE = fear of negative evaluation, Regular assessment = mean score of two-unit language exams, Formal exam = mean score of mid-term exam and final exam, FL achieve = mean score of regular assessment and formal examination

Table 3. Descriptive Statistics (Mean and SD), Split by Instructional level

	Year 4 (*n*=215)	Year 5 (*n*=209)	Year 6 (*n*=207)
FL anxiety	82.35(15.66)	87.41(16.89)	94.55(19.01)
ATC	24.85(6.56)	23.78(6.70)	23.61(6.16)
CA	27.47(7.38)	30.76(7.39)	33.58(7.84)
FNE	22.89(6.73)	24.80(7.40)	27.56(8.64)
TA	7.15(2.35)	8.07(2.82)	9.80(2.90)

Note: FL anxiety = FLCAS score, ATC = Attitude towards classroom, CA = communication apprehension, TA = test anxiety, FNE = fear of negative evaluation,

Table 4 Correlations between FL Anxiety and FL Achievement

	FLCAS	ATC	CA	TA	FNE	Formal exam	Regular assess
FL anxiety	---						
ATC	.587**	---					
CA	.758**	.180**	---				
TA	.606**	.186**	.365**	---			
FNE	.805**	.262**	.435**	.490**	---		
Formal exam	-.700**	-.413**	-.535**	-.476**	-.538**	---	
Regular assess	-.537**	-.256**	-.446**	-.374**	-.423**	.790**	---
FL achieve	-.655**	-.355**	-.520**	-.450**	-.509**	.949**	.943**

Note: FL anxiety = FLCAS score, ATC = Attitude towards classroom, CA = communication apprehension, TA = test anxiety, FNE = fear of negative evaluation, Formal exam = mean score of mid-term exam and final exam, Regular assess = mean score of two-unit language exams, FL achieve = mean score of regular assessment and formal examination, *p<.05, **p<.001

Table 5. Correlations between FL Anxiety and Achievement, Split by Instructional level

	FLCAS	ATC	CA	TA	FNE	Formal exam	Regular assess
Year 4							
Formal exam	-.551**	-.464**	-.342**	-.221**	-.377**	---	
Regular assess	-.424**	-.306**	-.327**	-.090	-.297**	.716**	---
FL achieve	-.527**	-.417**	-.362**	-.169*	-.364**	.929**	.924**
Year 5							
Formal exam	-.694**	-.449**	-.563**	-.429**	-.451**	---	
Regular assess	-.473**	-.268**	-.421**	-.285**	-.306**	.798**	---
FL achieve	-.625**	-.387**	-.525**	-.383**	-.406**	.957**	.938**
Year 6							
Formal exam	-.751**	-.451**	-.559**	-.558**	-.637**	---	
Regular assess	-.569**	-.312**	-.432**	-.456**	-.486**	.793**	---
FL achieve	-.696**	-.402**	-.522**	-.535**	-.592**	.945**	.949**

Note: FL anxiety = FLCAS score, ATC = Attitude towards classroom, CA = communication apprehension, TA = test anxiety, FNE = fear of negative evaluation, Formal exam = mean score of mid-term exam and final exam, Regular assess = mean score of two-unit language exams, FL achieve = mean score of regular assessment and formal examination, *p<.05, **p<.001

Table 6. Regression Analyses Predicting FL Achievement with FL anxiety as Predictor, Split by Instructional level

Criterion variable: FL achievement			
Enter	R^2	Final β	*p*
All Instructional levels			
FL anxiety	0.43	-.66	.00
Year 4			
FL anxiety	.278	-.527	.00
Year 5			
FL anxiety	.391	-.625	.00
Year 6			
FL anxiety	.484	-.696	.00

Table 7. Regression Analyses Predicting FL achievement using Four FL Anxiety Factors as Predictors

Criterion variable: FL achievement				
Forward		R^2	Final β	*p*
Model1				
	1. CA	.27	-.520	.00
Model 2				
	1. CA		-.368	.00
	2. FNE	.37	-.349	.00
Model 3				
	1. CA		-.350	.00
	2.FNE		-.301	.00
	3.ATC	.41	-.214	.00
Model4				
	1. CA		-.316	.00
	2. FNE		-.227	.00
	3. ATC		-.205	.00
	4.TA	.44	-.186	.00

Note: ATC= attitude towards classroom, CA= communication apprehension, TA=test anxiety, FNE=fear of negative evaluation

Table 8. Regression Analyses Predicting FL achievement Using four FL Anxiety Factors as Predictors, Split by Instructional level

Criterion variable: FL achievement				
Forward		R^2	Final β	*p*
Year4				
	1.ATC	.174	-.318	.00
	2.CA	.255	-.229	.00
	3.FNE	.282	-.182	.00
Year5				
	1.CA	.276	-.365	.00
	2.ATC	.353	-.248	.00
	3.TA	.390	-.153	.01
	4.FNE	.407	-.150	.01
Year6				
	1.FNE	.350	-.307	.00
	2.CA	.438	-.285	.00
	3.ATC	.472	-.166	.01
	4.TA	.489	-.172	.01

Note: ATC= attitude towards classroom, CA= communication apprehension, TA=test anxiety, FNE=fear of negative evaluation